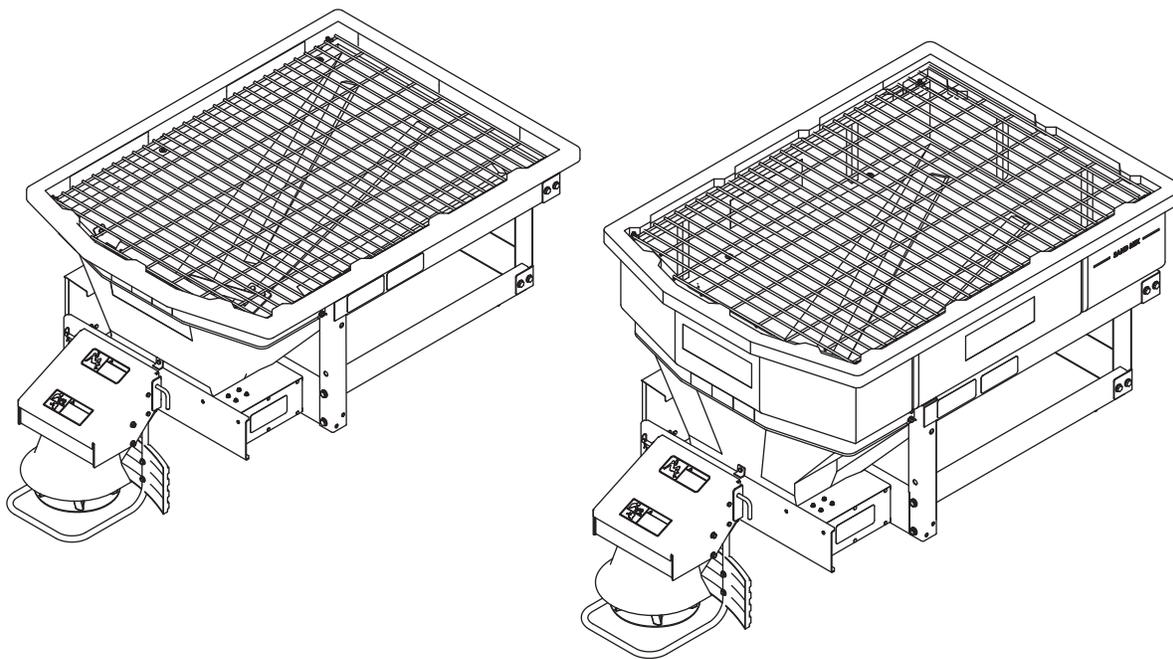




# V-Pro™ Hopper Spreader

32300, 32600

Owner's Manual  
*Original Instructions*



**⚠ CAUTION**

Read this document before operating  
or servicing the spreader.

This manual is for SnowEx® V-Pro 32300 and 32600 hopper spreaders  
with serial numbers beginning with 190901 and higher.

**This manual supersedes all editions with an earlier date.**



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## PREFACE

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This manual has been prepared to acquaint you with the safety information, operation, and maintenance of your new hopper spreader. Please read this manual carefully and follow all recommendations. This will help ensure profitable and trouble-free operation of your hopper spreader. Keep this manual accessible. It is a handy reference in case minor service is required.

When service is necessary, bring your hopper spreader to your distributor. They know your spreader best and are interested in your complete satisfaction.

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**NOTE: This spreader is designed to spread snow and ice control materials only. Do not use it for purposes other than those specified in this manual.**

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Register your spreader online at [www.snowexproducts.com](http://www.snowexproducts.com)

### OWNER'S INFORMATION

Owner's Name: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Outlet Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Outlet Address: \_\_\_\_\_

Vehicle Model: \_\_\_\_\_ Year: \_\_\_\_\_

Spreader Type (Model): \_\_\_\_\_ Serial #: \_\_\_\_\_

Length: \_\_\_\_\_ Weight: \_\_\_\_\_ lb/kg: \_\_\_\_\_

# SAFETY

## SAFETY DEFINITIONS

### **⚠ WARNING**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

### **⚠ CAUTION**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

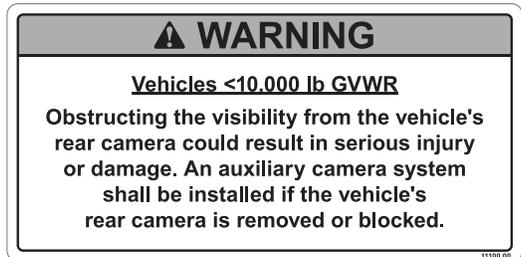
**NOTE:** Indicates a situation or action that can lead to damage to your spreader and vehicle or other property. Other useful information can also be described.

## WARNING/CAUTION LABELS

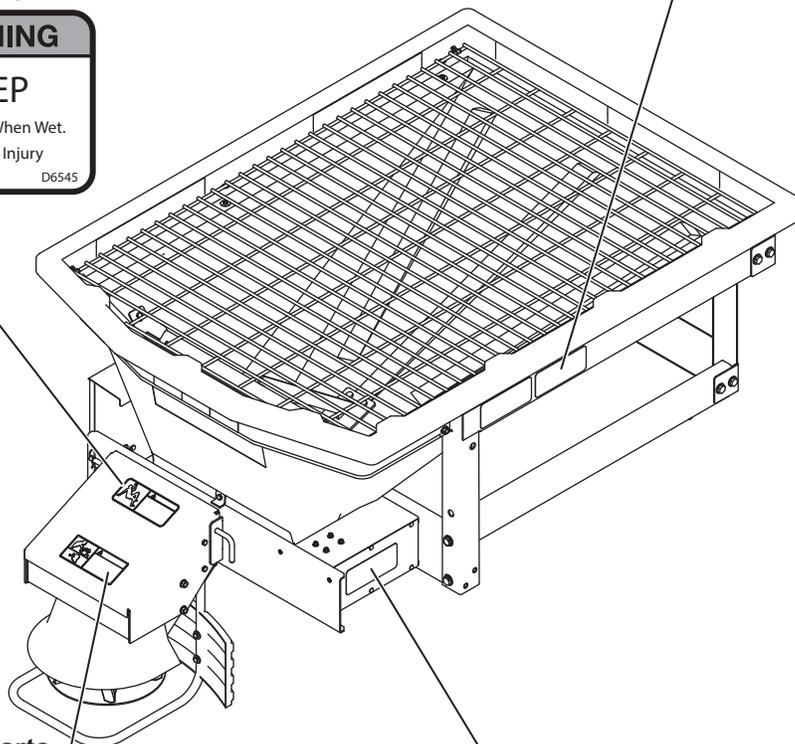
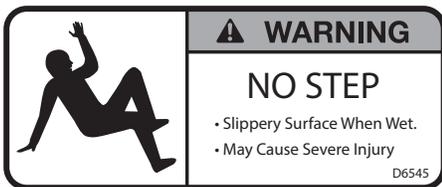
Become familiar with and inform users about the warning and caution labels on the spreader.

**NOTE:** If labels are missing or cannot be read, see your sales outlet.

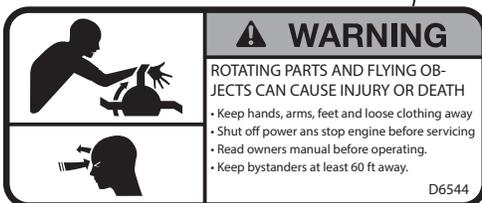
Warning Label – Rear Camera



Warning Label – No Step



Warning Label – Rotating Parts



Warning Label – Rotating Auger



# SAFETY

## Warning/Caution Labels, *continued*

### Warning Label – Read Owner's Manual

**⚠ WARNING**

- Read Owner's Manual for Installation Instructions.
- Secure spreader to truck with ratchet straps.
- Anchor spreader securely to truck body with bolt kit provided to prevent slipping or sliding.
- Routinely check straps and hardware to make sure they are secure.

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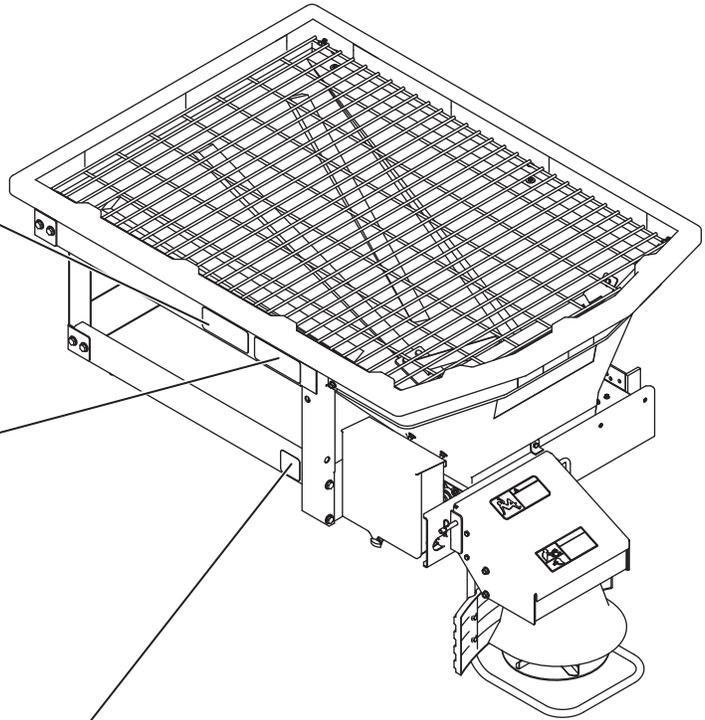
### Warning Label – GVWR

**⚠ WARNING**




- DO NOT EXCEED GVWR OF VEHICLE
- DO NOT OVERLOAD SPREADER
- LOAD SPREADER EVENLY

D6546



## SERIAL NUMBER LABEL

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

**YYMMDDLXXXXZZZZZ**



Code	Definition
YY	2-Digit Year
MM	2-Digit Month
DD	2-Digit Day
LL	2-Digit Location Code
XXXX	4-Digit Sequential Number
ZZZZZ	5- to 7-Digit Assembly PN

# SAFETY

## SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury and/or equipment and property damage. Read and understand labels and the Owner's Manual before installing, operating, or making adjustments.

### ⚠ WARNING

- Driver to keep bystanders minimum of 25 feet away from operating spreader.
- Before working with the spreader, secure all loose-fitting clothing and unrestrained hair.
- Before operating the spreader, verify that all safety guards are in place.
- Before servicing the spreader, wait for conveyor, auger, and spinner to stop.
- Do not climb into or ride on spreader.

### ⚠ WARNING



Overloading could result in an accident or damage. Do not exceed GVWR of vehicle. See Loading section to determine maximum volumes of spreading material.

### ⚠ WARNING

Vehicles <10,000 lb GVWR: Obstructing the visibility from the vehicle's rear camera could result in serious injury or damage. An auxiliary camera system shall be installed if the vehicle's rear camera is removed or blocked.

### ⚠ CAUTION

If rear directional, CHMSL light, or brake stoplights are obstructed by the spreader, the lights shall be relocated, or auxiliary directional or brake stoplights shall be installed.

### ⚠ CAUTION

- Do not operate a spreader in need of maintenance.
- Before operating the spreader, reassemble any parts or hardware removed for cleaning or adjusting.
- Before operating the spreader, remove materials such as cleaning rags, brushes, and hand tools from the spreader.
- Before operating the spreader, read the engine owner's manual, if so equipped.
- While operating the spreader, use auxiliary warning lights, except when prohibited by law.
- Tighten all fasteners according to the torque chart. Refer to torque chart for the recommended torque values.

### ⚠ CAUTION

Disconnect electric and/or hydraulic power and tag out if required before servicing or performing maintenance.

### ⚠ CAUTION



DO NOT leave unused material in hopper. Material can freeze or solidify, causing unit to not work properly. Empty and clean after each use.

**NOTE:** Lubricate grease fittings after each use. Use a good quality multipurpose grease.

# SAFETY

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## FUSES

The electrical system contains several automotive-style fuses. If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire.

## PERSONAL SAFETY

- Remove the ignition key and put the vehicle in PARK or in gear to prevent others from starting the vehicle during installation or service.
- Wear only snug-fitting clothing while working on your vehicle or spreader.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt, and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses, and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

## FIRE AND EXPLOSION

### WARNING

**Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.**

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

## CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate Mobile Communication Equipment such as cell phones, text messaging devices, pagers, or two-way radios.

## VENTILATION

### WARNING

**Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.**

## BATTERY SAFETY

### CAUTION

**Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks, or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.**

- Batteries contain sulfuric acid, which burns skin, eyes, and clothing.
- Disconnect the battery before removing or replacing any electrical components.

# SAFETY

## TORQUE CHART

### ⚠ CAUTION

Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to the torque chart. Use standard methods and practices when attaching spreader, including proper personal protective safety equipment.

#### Recommended Fastener Torque Chart

##### Inch Fasteners Grade 5 and Grade 8

Size	Torque (N·m)		Size	Torque (N·m)	
	 Grade 5	 Grade 8		 Grade 5	 Grade 8
1/4-20	11.4	16.2	9/16-12	148	209
1/4-28	13.1	18.5	9/16-18	164	232
5/16-18	23.6	33.3	5/8-11	203	287
5/16-24	26.0	36.9	5/8-18	230	325
3/8-16	41.8	59.1	3/4-10	365	510
3/8-24	47.5	67.0	3/4-16	403	569
7/16-14	67.0	94.6	7/8-9	582	822
7/16-20	74.8	105.6	7/8-14	643	907
1/2-13	102.1	144.3	1-8	873	1232
1/2-20	115.2	162.7	1-12	954	1349

##### Metric Fasteners Class 8.8 and 10.9

Size	Torque (N·m)		Size	Torque (N·m)	
	 Class 8.8	 Class 10.9		 Class 8.8	 Class 10.9
M6 x 1.00	10.4	15.0	M20 x 2.50	441	610
M8 x 1.25	26.4	36.5	M22 x 2.50	580	831
M10 x 1.50	52.2	72.2	M24 x 3.00	762	1055
M12 x 1.75	91	126	M27 x 3.00	1079	1544
M14 x 2.00	145	200	M30 x 3.50	1515	2095
M16 x 2.00	226	313	M33 x 3.50	1990	2849
M18 x 2.50	301	431	M36 x 4.00	2647	3662

These torque values apply to fasteners except those noted in the instructions.

# LOADING

This Owner's Manual covers vehicles that have been recommended for carrying the hopper spreader. Please see your local dealer for proper vehicle applications.

## ⚠ WARNING

Overloading could result in an accident or damage. Do not exceed GVWR of vehicle.

## ⚠ CAUTION



Read and adhere to manufacturer's ice-control material package labeling, including Safety Data Sheet requirements.

## ⚠ CAUTION

Never use wet materials or materials with foreign debris with any of these spreaders. These units are designed to handle dry, clean, free-flowing material.

## MATERIAL WEIGHTS

Material	Density		
	(lb/ft <sup>3</sup> )	(lb/yd <sup>3</sup> )	(kg/m <sup>3</sup> )
Salt	80	2160	1282
Sand	100	2700	1602

Material densities are approximate and are based on dry, loose material. It is the responsibility of the operator to know the weight of the material to be spread and the vehicle carrying capacity.

## SPREADER SPECIFICATIONS

V-Pro™ Hopper Model	Overall Length	Overall Width	Overall Height	Empty Weight	Capacity Struck
32300	195.6 cm 77 in	123.2 cm 48.5 in	68.6 cm 27 in	178 kg 392 lb	0.38 m <sup>3</sup> 0.5 yd <sup>3</sup>
32600	195.6 cm 77 in	123.2 cm 48.5 in	91.4 cm 36 in	191 kg 422 lb	0.76 m <sup>3</sup> 1.0 yd <sup>3</sup>

## DETERMINING VEHICLE PAYLOAD

### ⚠ WARNING

Overloading could result in an accident or damage. Do not exceed GVWR of vehicle. Follow the steps below to determine maximum volumes of spreading material.

1. Install the hopper spreader and optional equipment according to the instructions.
2. Install or attach any other equipment that will be on the vehicle while the hopper spreader will be in use (step bumper, trailer hitch, snowplow, etc.). Fill gas tanks.
3. Obtain the Gross Vehicle Weight Rating (GVWR) from the vehicle manufacturer.
4. With the occupants in the truck for normal hopper spreader operation, weigh the vehicle to obtain gross vehicle weight (GVW).
5. Subtract the GVW from the GVWR to determine the available material payload.
6. Obtain the weight per cubic yard (lb/yd<sup>3</sup>) of the desired material. Divide the weight into the payload to determine the maximum volume of material that can be carried.
7. Fill the hopper with the calculated volume of material. Reweigh the vehicle with occupants and verify that the GVW is less than the vehicle's ratings.
8. Repeat Steps 6 and 7 for each type of material.

# MOUNTING THE SPREADER

## MOUNTING SPREADER

**NOTE:** Periodically throughout the snow and ice control season, verify that mounting devices are secure.

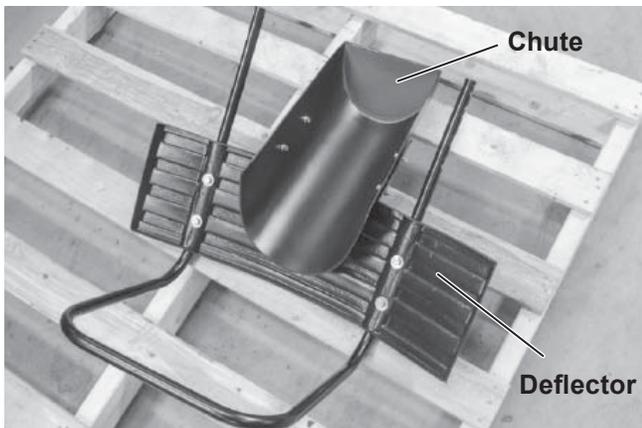
### **⚠ WARNING**

Spreader shall be bolted to vehicle frame. Do not rely on the tie-down chains or straps alone to hold spreader in vehicle.

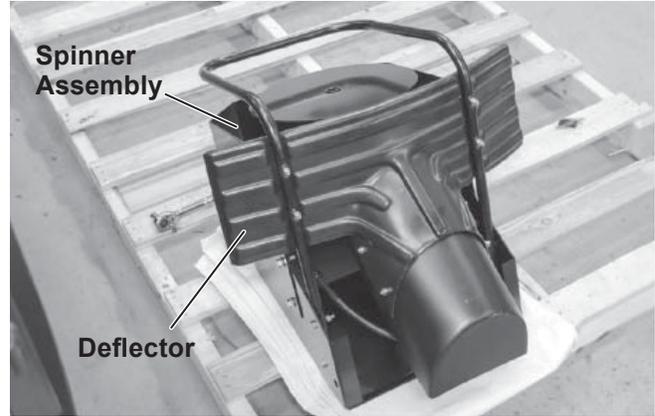
### **⚠ CAUTION**

Before lifting, verify that hopper is empty of material. The lifting device must be able to support the spreader's weight.

1. Remove the tailgate from the UTV bed.
2. Load the spreader onto the UTV bed.
3. Assemble the chute to the deflector using the four 1/4" x 3/4" serrated flange cap screws and 1/4" locknuts in the supplied hardware kit.



4. Install the chute/deflector assembly to the spinner assembly using the four 5/16" x 1-1/2" tapping screws and 5/16" locknuts in the supplied hardware kit to complete the drive assembly.



5. Mount the drive assembly to the spreader using the 1/2" x 17-5/8" bent pin and secure it with the 2-3/8" hairpin cotter. Ensure that the bent pin passes through the small center mounting tab on the auger drive enclosure.
6. Slide the spreader forward until the deflector/chute assembly makes contact with the vehicle. Then slide spreader back approximately 1" to allow proper clearance.
7. Once the spreader is positioned front to back in the vehicle bed, center it left to right.
8. Looking at the inside corners of the spreader frame, you will notice four holes in the bottom of the frame. Using a paint pen or similar marking device, mark the hole locations on the vehicle bed.

**If mounting holes cannot be drilled in the marked locations,** install the mounting bars from the optional UTV mounting kit to the spreader frame using the supplied 1/2" x 1-1/2" carriage bolts and 1/2" locknuts. Use the existing holes in the mounting bars to mark drilling locations on the vehicle bed.

## MOUNTING THE SPREADER

### **⚠ CAUTION**

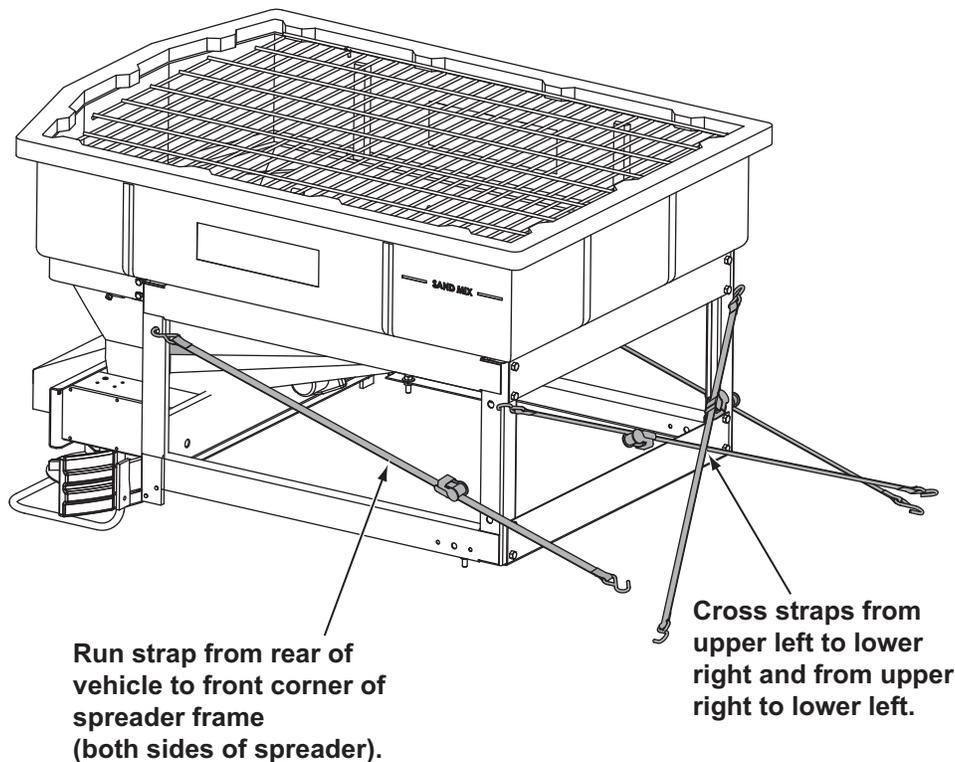
Before drilling holes, check to be sure that no vehicle wiring or other components could be damaged.

9. Remove the spreader from the vehicle bed and drill 1/2" holes at the marked locations.

**NOTE: Pay special attention when drilling or clamping dissimilar metals to aluminum bodies. Galvanic corrosion can occur if not handled properly. Contact vehicle manufacturer for recommended attachment practices.**

10. Install the spreader to the vehicle using the supplied 1/2" x 3" carriage bolts and 1/2" locknuts.
11. Tighten all fasteners according to the torque chart.
12. Install the four ratchet straps as shown below.

**NOTE: It is important for safety that this strapping method be used as the standard mounting procedure.**



# OPERATING THE SPREADER

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## DRIVING AND SPREADING ON SNOW AND ICE

### **⚠ WARNING**

Never operate equipment when under the influence of alcohol, drugs, or medications that might alter your judgment and/or reaction time.

### **⚠ WARNING**

Never exceed 45 mph (72 km/h) when loaded spreader is attached to vehicle. Braking distances may be increased and handling characteristics may be impaired at speeds above 45 mph (72 km/h).

### **⚠ WARNING**

Never allow children to operate or climb on equipment.

### **⚠ WARNING**

Drinking and then driving or spreading is very dangerous. Your reflexes, perceptions, attentiveness, and judgment can be affected by even a small amount of alcohol. You can have a serious or even fatal collision if you drive after drinking. Please do not drink, then drive or spread ice-control materials.

Follow your vehicle owner's manual instructions for driving in snow and ice conditions. Remember, when you drive on snow or ice, your wheels will not get good traction. You cannot accelerate as quickly, turning is more difficult, and you will need longer braking distance. Wet and hard-packed snow or ice offer the worst tire traction. It is very easy to lose control. You will have difficulty accelerating. If you do get moving, you may have poor steering and difficult braking, which can cause you to slide out of control.

Here are some tips for driving in these conditions:

- Drive defensively.
- Do not drink, then drive or spread ice-control materials.
- Spread or drive only when you have good visibility for operating a vehicle.
- If you cannot see well due to snow or icy conditions, you will need to slow down and keep more space between you and other vehicles.
- Slow down, especially on higher-speed roads. Your headlamps can light up only so much road ahead.
- If you are tired, pull off in a safe place and rest.
- The spreader's size and location reduce driver visibility to the rear of the vehicle. We recommend an OSHA compliant backup alarm for all governed employers.
- Keep your windshield and all glass on your vehicle clean to see around you.
- Dress properly for the weather. Wear layers of clothing; as you get warm, you can take off layers.

## SPREADING TIPS

- Spread ice melters with the storm to prevent unmanageable levels of ice.
- Never exceed 10 mph (16 km/h) when spreading.
- For a wider pass, increase spinner speed.
- For a heavier pass, drive slower or increase auger speed.
- Never operate spreader near pedestrians.
- Calculate spread pattern when near vegetation.

---

**NOTE: The spinner motor is not designed for continuous duty. Allow the motor to cool between long cycle times.**

---

# OPERATING THE SPREADER – CAB CONTROL

## POWERING THE CONTROL

Power is not applied to the control until the vehicle ignition is turned to ACC or ON. Once the control has power it performs a light check and displays the software version on the status display. The control then checks for a connected spreader. If no spreader is detected, the control does the following:

- **nC** (no connection) appears on the red status display for five seconds.
- A single beep will sound.
- Control enters standby mode with no lights illuminated.

If any button is pressed on the control, it will wake and check again for spreader connection. If no spreader is detected, it will act as described above. If a spreader is detected, it will transition to ready mode.

## STARTING AND STOPPING SPREADER

**To start the spreader**, press the ON/OFF button. The control backlights are illuminated when the vehicle ignition is ON and the spreader is connected. When the spreader is ON, the ON/OFF button and inner arc around each control knob will also illuminate.

**To stop the spreader**, press the ON/OFF button again.

The ON/OFF button also operates as an emergency stop when required.

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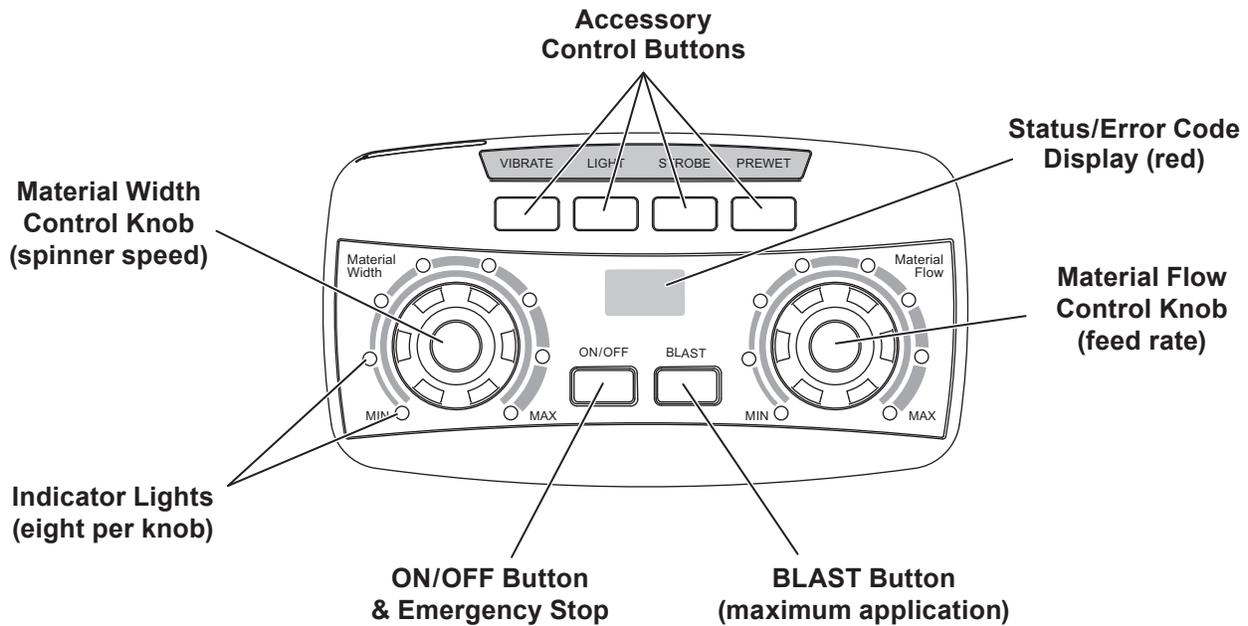
**NOTE: The vehicle ignition must be ON to start the spreader.**

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**NOTE: If vehicle ignition is turned OFF while spreader is running, the motors will stop.**

---



# OPERATING THE SPREADER – CAB CONTROL

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## CONTROLLING MATERIAL APPLICATION

The material application settings can be adjusted while the spreader is ON or OFF. Settings are shown by the indicator lights around the control knobs. When the spreader is OFF, a single LED will light to show the current setting. When the spreader is ON, the number of blue LEDs illuminated will increase/decrease as the knobs are turned clockwise/counterclockwise.

The auger drive will not deliver material until the ON button is pressed.

The Material Width (left) knob controls spinner speed. Turning the knob clockwise will increase the width of the application area.

The Material Flow (right) knob controls the auger drive. Turning the knob clockwise will increase the feed rate of material to the spinner.

Turning the control knobs counterclockwise will decrease the width of the application area and the feed rate of material.

## BLAST/Maximum Application

1. Press and hold the BLAST button when maximum flow rate and application area are needed temporarily. The BLAST button will illuminate while depressed.
2. Release the button when maximum application settings are no longer needed.

---

**NOTE: Spinner speed and material feed rate revert to the previous settings once the BLAST button is released.**

---

## CAB CONTROL MODES

### Standby Mode

Vehicle ignition is set to ACC or ON; cab control is OFF. Control has power. No spreader was detected. No lights are illuminated on the control. Press any button to wake.

### Ready Mode

Vehicle ignition is set to ACC or ON; cab control is OFF. Control has power. Spreader is detected.

The Material Width and Material Flow control knobs can be set to start-up conditions, but the spinner and drives will not operate until the cab control is turned ON.

Accessory lights and vibrator are operational. The BLAST function is not operational.

### ON Mode

Vehicle ignition is set to ACC or ON; cab control is ON.

Spinner and hopper motors will start. All cab control functions are operational. Accessory lights and vibrator are operational.

During normal spreader operation no control codes are displayed. Information or setup codes will appear when relevant. These codes will not stop spreader operation.

### Error Mode

When an error condition occurs, spreader operation will shut down. A two-character error code will flash on the display and a beep will sound. If there are multiple error codes, the codes will flash in a repeating sequence.

Refer to the Error Codes portion of the following Cab Control Codes table. Also see the Troubleshooting Guide section of this manual.

Once the error condition has been resolved, press the ON/OFF button to clear the error code(s). Press the ON/OFF button again to resume spreader operation.

The error code will reappear if the error condition has not been rectified. If the error condition persists, contact your authorized dealer.

Multiple resets within a short time frame will cause the hopper module to time out if components are overheating. The control will display an **EF** error code.

Accessory work lights and strobe lights can be used when an error code is in effect, and will remain in their current state. The vibrator will not function.

# OPERATING THE SPREADER – CAB CONTROL

## CAB CONTROL CODES

Setup Codes		
Code	Definition	Procedure
<b>Cb</b>	Calibrate the Empty Hopper setting.	With control in ON mode, press and hold the left control knob until the <b>Cb</b> code displays. Calibration cycle is automatic.*
<b>Cc</b>	Clear calibration data for Empty Hopper setting; clear <b>EH</b> code.	Press the right control knob to clear all calibration data during the calibration cycle.
<b>LS</b>	Set LED brightness level.	With control in Ready mode, press and hold left control knob to get <b>LS</b> code. Release pressure and turn left control knob to desired brightness setting. Wait for confirming <b>SL</b> code to display.*
<b>SL</b>	Confirms that LED brightness level has been reset.	

\* For full instructions, see the Setup Procedures section.

Information Codes		
Code	Definition	Response
<b>Ar</b>	Auto-reverse sequence is active.	The spreader will automatically detect and attempt to clear a jam. If auto-reverse is unsuccessful, turn the spreader OFF and extract the material that is causing the problem. Follow all warning directions when clearing jams.
<b>dU</b>	Not applicable to tailgate spreaders. Possibly indicates a harness or module issue.	Contact authorized dealer.
<b>EH</b>	Empty hopper (a beep will sound).	Check hopper for material. Recalibrate Empty Hopper setting as described above for <b>Cb</b> code.
<b>Lb</b>	Low battery. Hopper module is sensing <10V. ( <b>Lb</b> becomes an error code when module senses $\leq 6V$ .)	Refer to the <b>Lb</b> row under "Error Codes" (next page).

Error Codes – Spreader Operation Stopped			
Code	Definition	Possible Cause	Suggested Solution
<b>bb</b>	Bad button.	Button is stuck. Button was pressed while vehicle ignition was entering ACC or START mode. Possible harness issue.	Inspect control. Free up button. Do not press any spreader cab control buttons while the vehicle ignition is being engaged. Check connections and integrity of vehicle harness.
<b>bH</b>	Bad hopper.	Possible module or control mismatch.	Replace control or module. Use only genuine service parts. Contact authorized dealer.
<b>CE</b>	No communication with spreader module.	Loose connection. Module lost power.	Confirm that spreader and control harnesses are connected to the vehicle harness. Check fuses, power to spreader module, all connections, and power studs. Check that port B is plugged into the module.
<b>CF</b>	Control malfunction.	Control is overheating. May be a combination of faults.	Inspect connections at spreader module, hopper drive motor, and spinner drive motor.

## OPERATING THE SPREADER – CAB CONTROL

<b>Error Codes – Spreader Operation Stopped – <i>continued</i></b>			
<b>Code</b>	<b>Definition</b>	<b>Possible Cause</b>	<b>Suggested Solution</b>
<b>CP</b>	Not applicable to tailgate spreaders. See suggested solution.	Not applicable to tailgate spreaders.	Reset the control by pressing the ON/OFF button. If <b>CP</b> code continues to display, contact authorized dealer.
<b>Ct</b>	Control is hot.	Cab temperature is too high. Control overheated.	Turn spreader OFF and allow control to cool off.
<b>EF</b>	Excessive drive faults.	Too many <b>HO</b> and/or <b>SO</b> error codes; hopper module overheating.	Control times out for 60 seconds. Ensure that auger and/or spinner are not jammed.
<b>HO</b>	Hopper overload – software trip.	Drive system has high current. Material is jammed.	Inspect auger; clear material jam.
<b>HO.</b>	Hopper overload – hardware trip.	Auger is damaged.	
<b>HP</b>	Hopper power issue. No motor present.	Hopper drive motor is not connected. Possible motor defect.	Check connections to the auger drive motor (P–FEED and FEED–N posts on the module and studs on the motor). Replace the motor.
<b>Lb</b>	Low battery. Hopper module is sensing $\leq 6V$ .	Bad connection or low battery. Snowplow or other vehicle power use may be driving down voltage.	Voltage is measured at the hopper module, so <b>Lb</b> code may indicate cable voltage loss. Check the battery, alternator, and connections.
<b>nC</b>	No connection.	Spreader not connected to vehicle harness.	Connect the vehicle and spreader harness. Check the vehicle harness fuse. Inspect the spreader and vehicle harnesses. Check module.
<b>OH</b>	Overheating.	Spreader module is too hot.	Allow a cool-off period—60 seconds or longer. Check for loose harness connections. Check accessory connections. Check integrity of accessory wiring and harness. Clear jammed material. Contact authorized dealer.
<b>OH.</b>	Overheating module – microprocessor.	Spreader module malfunction. Accessories wiring/function problem. Drive motor overload.	
<b>rS</b>	Reset of spreader module.	Power loss to module detected on startup.	Reset the control by pressing the ON/OFF button. Check vehicle harness and battery connection.
<b>SO</b>	Spinner drive overload – software trip.	Material jammed in chute/spinner area.	Inspect spinner and spinner drive components for alignment and condition. Check for damage to bearings, shafts, and sprockets. Adjust and replace parts as required.
<b>SO.</b>	Spinner drive overload – hardware trip.	Spinner shaft is damaged.	
<b>SP</b>	Spinner power issue. No motor present.	Spinner drive motor is not connected. Possible motor defect.	Check connections to the motor (SPIN and GND posts on the module). Replace the motor.

# OPERATING THE SPREADER – CAB CONTROL

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## SETUP PROCEDURES

### Calibrate the Empty Hopper Setting (**Cb** and **EH** Codes)

Calibrating the empty hopper setting enables the cab control to alert the operator when the hopper is empty.

Recalibrate the empty hopper setting at the start of each ice-control season.

1. Ensure that the hopper is empty before beginning the calibration.
2. Turn the vehicle ignition to ACC or ON. Press the ON/OFF button on the cab control to turn the control ON.
3. Press and hold the Material Width (left) knob for approximately 10 seconds until the **Cb** code displays.
4. The calibration cycle will begin. The blue LEDs around the Material Flow (right) knob will illuminate in succession until all eight are lit.
5. When the automatic calibration cycle is complete, the control will automatically revert to the previous material application settings.

If the control is turned OFF or loses power during the calibration cycle, the calibration data will be lost. Make sure that the control is ON and restart the calibration process at Step 3.

Once the empty hopper setting has been calibrated, the **EH** code will flash on the display and a beep will sound whenever the hopper is empty. The **EH** code is informational only and will not stop spreader operation.

### Clearing Empty Hopper Calibration Data (**Cc** Code)

The empty hopper calibration may be cleared, if desired. The control will no longer display the **EH** status code when the hopper is empty.

Start the calibration cycle as described above. At Step 4, press the Material Flow (right) knob during the calibration cycle to clear *all* calibration data. The **Cc** (Clear Calibration) code will display and the control will exit **Cc** mode automatically.

### Adjust LED Brightness Level (**LS** and **SL** Codes)

The brightness setting of the cab control lights can be adjusted from 1 to 16. The factory default setting is 8.

1. Turn the vehicle ignition to ACC or ON. If necessary, press the cab control ON/OFF button to turn the control OFF.
2. Press and hold the Material Width (left) knob for approximately 3 seconds until the **LS** code is displayed.
3. Release the knob and turn it clockwise or counterclockwise to increase or decrease the brightness level. The light level number will show in the status display.
4. After selecting the desired brightness level, wait a few seconds for the **SL** confirmation code to display.

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**NOTE: A brightness level setting of 12 or higher is recommended for daylight conditions.**

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# MAINTENANCE

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## **⚠ WARNING**

Never remove spreader with material in hopper.

## **⚠ CAUTION**

Disconnect electric power at spreader electrical wiring harness connection and tag out, if required, before servicing or performing maintenance.

## **⚠ CAUTION**

- When replacing parts use only original manufacturer's parts. Failure to do so will void warranty.
- The control is a solid state electronic unit and is not serviceable. Any attempt to service will void warranty.
- There are no serviceable parts in the motor/transmission assembly. Any attempt to service will void warranty.
- Spinner motor is not designed for continuous duty. Allow motor to cool between long cycle times.
- When pressure washing motor enclosure area, keep spray at least 36" away from motor enclosures.

## LUBRICATION

To keep your spreader running smoothly, observe the following recommendations:

- Lubricate bearings after every 20 hours of use.

## AFTER EACH USE

- Wash out the hopper and rinse off all external surfaces.
- Apply dielectric grease on all electrical connections to prevent corrosion.

## STORAGE

Store control in a cool dry place during the off-season.

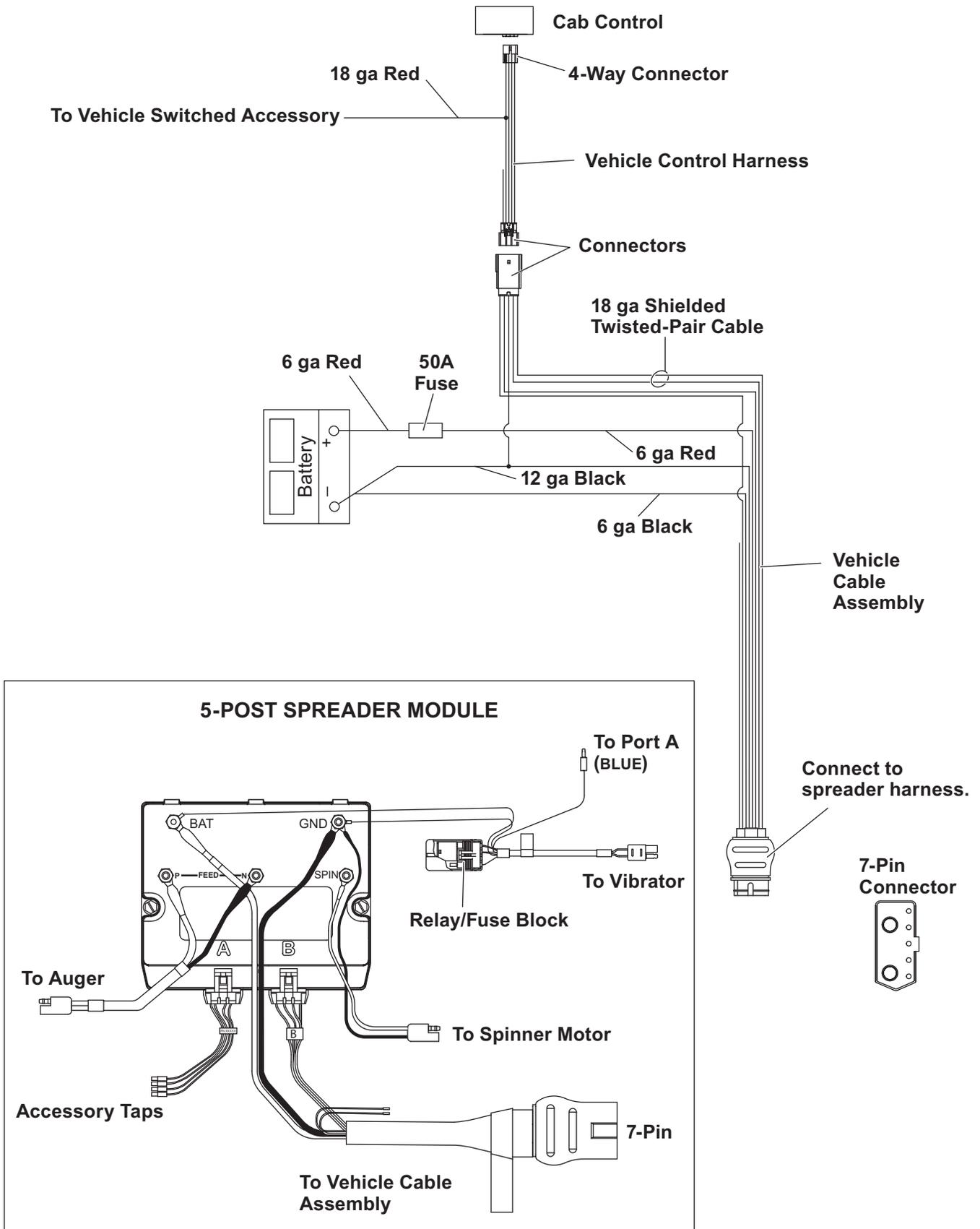
## AT THE END OF EACH SEASON or AFTER EXTENDED STORAGE

- Wash out the hopper and rinse off all external surfaces.
- Apply dielectric grease on all electrical connections to prevent corrosion.
- Lubricate all grease fittings with good quality multipurpose grease.
- Oil or paint all bare metal surfaces.
- If motor cover is removed for any reason, use silicone sealant to ensure weather proofing of enclosure.
- After first use, tighten all fasteners on spreader and mount.

## FUSE REPLACEMENT

If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire.

# HARNESS WIRING DIAGRAM / MODULE & CABLES



## TROUBLESHOOTING GUIDE

Please see your distributor for service. The troubleshooting reference table below may guide you in diagnosing the issue.

For a reference table of the cab control error codes, see the Operating the Spreader – Cab Control section of this manual.

Before servicing the spreader:

- Review all safety information.
- Confirm that all electrical connections are tight and clean.
- Confirm that nothing is jammed in the hopper.

Problem	Possible Cause	Suggested Solution
<b>No power to cab control.</b> Ignition and control switches ON; control knob indicator lights not illuminated.	1. Control is in standby mode. Spreader is not connected.	1. Press any button on control to wake.
	2. Control connector plug is loose.	2. Check plug connection at cab control.
	3. Switched accessory connection is poor, or faulty battery.	3a. Check for low battery. 3b. Check switched accessory connection.
	4. Blown fuse.	4. Replace spreader vehicle battery cable fuse.
	5. Vehicle control harness is damaged.	5. Repair or replace damaged wires or harness as required.
<b>Cab control shuts down.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Cross-reference displayed error code with the Cab Control Codes table.	1a. See suggested solution in the Cab Control Codes table. 1b. Reset the control by pressing the ON/OFF button.
	2. Poor electrical conditions.	2a. Clean or replace connectors. 2b. Apply dielectric grease.
	3. Electrical short.	3. Check electrical connections.
<b>Turning control knobs does not change motor speed.</b> Control is powered ON.	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Malfunctioning cab control.	1. Replace cab control.
	2. Malfunctioning motor(s).	2. Replace motor(s).
	3. Malfunctioning spreader module.	3. Replace spreader module.
<b>Spreader does not operate.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Wire harness is damaged or has an open circuit between cab control and spreader.	1a. Check plug connections at cab control and spreader. 1b. Check wire connections at vehicle battery and fuse. 1c. Check motor connections.
	2. Overloaded condition has triggered a time-out, or damaged motors or module.	2a. Wait 60 seconds for time-out to expire. 2b. Check motors. Repair or replace. 2c. Replace module.

## TROUBLESHOOTING GUIDE

Problem	Possible Cause	Suggested Solution
<b>Motor does not run.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Electrical connections are loose.	1. Open access cover and check motor, harness, and module connections.
	2. Blown fuse.	2. Replace spreader vehicle battery cable fuse.
	3. Motor seizes.	3. Replace motor.
<b>Material does not flow.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Obstruction in hopper.	1. Clear obstruction.
	2. Material is bridged.	2. Clear the bridged material or adjust the baffle extension.
	3. Auger is loose on shaft.	3. Align auger with flat machined area on shaft and tighten locking bolt on side of auger.
	4. Auger runs backward.	4a. Check the wire connections at the P-FEED-N posts on the spreader module. Auger harness RED to P-FEED; auger harness BLACK to FEED-N. 4b. Check that auger motor harness is correct part number for spreader model.
	5. Material is wet.	5. Replace with dry material.
	6. Material is coarse or frozen.	6. Replace material.
<b>Material free flows.</b>	1. Incorrect baffle length.	1a. Install correct baffle. 1b. Adjust the baffle extension.
	2. Baffle does not touch hopper on three sides.	2. Reposition baffle.
<b>Vibrator does not work.</b>	1. Electrical connections are loose.	1a. Check the vibrator to harness connection. 1b. Check vibrator harness to module connections (BAT, GND, and blue bullet connector).
	2. Blown fuse.	2. Open access cover to replace fuse in the fuse holder on the vibrator harness.
	3. Vibrator failure.	3. Replace vibrator.



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